

JULY 1986

# TWIN CITIES ATARI INTEREST GROUP

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President: Steve Ingalsbe (452-7196) Vice President: Tom Green  
Treasurer: Dick Johnson Secretary: Paul Franson  
Newsletter Editors: Cory Johnson & Dave Stengel  
Membership renewal

You may renew your membership at the meeting, and a check for \$15.00 made out to TAIG, and on a seperate piece of paper, your name, and address to

Marshall Keith 413 Connelly Lane, Burnsville, MN. 55337.  
For more information, call Marshall at 435-1072.

Editors Notes  
and What's Happening at the July Meeting!  
by Cory Johnson

Well, the officers may have changed, but I'm still editing, and I'm still my old bungeling self.

## CORRECTION READ THIS!!!

I mucked up the 500+K 130XE upgrade last month, so DON'T try to modify your 130 according to those plans! I've reprinted the correct (I hope(heh)) plans in this issue. Thanks to Steve Ingalsbe for providing the docs.

I mucked it again!

Yes, Steve's presidents notes were supposed to be in this issue, but I can't seem to find that disk, for all I know it could anywhere, but I don't think it made it to my house. Sorry Steve, sorry everyone.

## What's up at the meeting

If all goes as planned, we will demo Rainbow DOS, a public domain dos. Also, we will demo, and RAFFLE off (to members only folks!) Super Boulder Dash, and Forbidden Forest. We will also (cross your fingers) demo the new TAIG/SPACE BBS, using methods different from what was attempted last month...

TAIG will be selling the Percom drives and Basic XL at the swap meet.

## Article submission

Articles should be submitted in standard text files (Atari Writer, Hometext, Speedscript).

If you don't own a wordprocessor, you can enter an article into BASIC using REM stataments. Or, send legibly written or typed text (make any schematics legible also, we can't reprint what we can't read) to

Cory Johnson 1835 Shadyview Circle, Plymouth, MN. 55447  
phone 473-4190

Dave Stengel 3230 Shadyview Lane, Plymouth, MN. 55447

Articles may also be dropped off at

Wizard's Work 18th and 36th, New Hope, MN.

If you wish, you can also upload your article to the BBS. Leave a message to the sysop stating that the upload was an article. The BBS number is 522-2687.

## DEADLINE

Deadline for submission is the 10th of the month. Any articles recived after the 10th will be held until the next newsletter.

## Classified ads.

Taig members may also submit FREE classified ads 2 lines in length. Ads are submitted in the manner as articles.

hands vote.

#### Minutes from the June 29th TAIG Meeting

The meeting opened with news from Atari Corp and the Consumer Electronics Show (CES) in Chicago. The main highlights included:

1. A 300/1200 baud modem compatible with all existing Atari computers (400/800, XL, XE, and ST) was announced. The price will be under \$100.
2. The 80 column adaptor for the eight bit machines was formally announced. The price will be under \$100. The unit will be compatible with all software which accesses the text screen through the "E:" device only.
3. The 3.5" eight bit floppy disk drives should be out real soon now. The hardware is ready, but software is holding up the formal announcement. These drives are supposed to be 100% compatible with existing software.
4. A hardware/software bundled package price was announced for the 65XE. Included in the package are the 65XE and four cartridge based applications (games) worth \$85. The package price is under \$100.
5. A hardware package price for the 520ST was announced. For \$499 you receive the 520ST CPU console, single sided floppy disk drive, and a monochrome monitor.

Steve Ingalsbe gave a brief of TAIG's activities at the Amateur Fair and Ham Fest at the State Fairgrounds. Three new members signed up at the event. Photographs of the TAIG booth were on display.

Among the contacts made at the Amateur Fair was Mid Tek Electronics, a firm which carries parts and accessories for Atari computers, including circuit boards (computer and cartridge), chip sets, and cartridge software, to name a few. Mid Tek's new address is:

Mid Tek Electronics  
11804 Maple  
Harlan, IN 46743  
Ph. (219) 657-5680

There was a reminder for anyone interested of the meetings of the local ST interest groups.

MAST meets the third Friday of the month at 7:30 pm at the Falcon Heights Community Center, 2077 W. Larpenteur Ave.  
STING meets the first Wednesday of the month at 7:30 pm at Dunwoody Technical Institute in the Bennet Room.

A motion was made and seconded to have a Program Chairman either volunteer or be volunteered by the president to coordinate vendor and member program demos at the meetings. After a brief discussion, the motion was passed by a show of

The next order of business was the election of officers for the coming year. The candidates were as follows:

President: Steve Ingalsbe  
Vice Pres: Tom Green  
Treasurer: Richard Johnson  
Secretary: Paul Franson

There were no further nominations from the floor. The above named officers were elected by a show of hands vote.

Steve Ingalsbe outlined a plan of action to get the TAIG/SPACE BBS back on line. His plan is to move the BBS to Tom Green's house and hook it up to the SUPRA 10 Meg hard drive. Two areas of concern were voiced by Steve. First, the existing Percom disk drives are notoriously unreliable, and need to be replaced. These drives are the primary reason that the board has been down of late. Steve's second concern is that the 130XE system that the board runs on is the same one which is brought to meetings every month for demos. Steve and Tom feel that it is not possible to run a reliable BBS if the system is taken down and moved on a monthly basis, so we need to look into getting some dedicated hardware for it.

There is no June Disk of the Month. The DOM archives need to be updated with meaningful documentation provided for the software.

Finally, two software packages were demonstrated. The first, The Print Shop Companion, is an add on to the Print Shop package, offering new features including:

- full page graphics editing
- calendars organized by the week or month
- a font editor with 12 new predefined text fonts
- Tile Magic, which allows the creation of mirror imaged tiles in one of four modes
- a border editor
- a "creature maker" to create bizarre figures
- update your Print Shop disk to provide color graphics displays on the main menu page.

The second software package demo'd was Koronis Rift, from Lucasfilm and Epyx. This version was user modified to make it easier to get high scores. An article in a future newsletter was promised outlining the techniques used to change the difficulty of the game. The object of the game is to fly around looking for the wreckage of an ancient

advanced civilization. When an old ruin is found, you must defeat the enemy saucer defending it, and then can search the wreck for anything of value. All items found can either be added to your arsenal, or taken to a mother ship and sold.

Things to look forward to at next month's meeting include:

The new officers take charge!

An update on the status of the TA16/SPACE BBS.

A demonstration of how to call up a Bulletin Board Service, and what to do when you get there.



We're out looking  
for articles!!

Reprinted from LAACE

THE ATARI 800 PLUS 256K  
MEMORY MODIFICATION  
INSTALLATION MANUAL  
for the  
ATARI 800 HOME COMPUTER

Original documentation by

David B. Byrd

1513 Comanche Drive

Las Vegas, NV 89109

SYNFILE+ & SYNCALC compatibility provided by Walt Hoffman.

Provided free for the personal use of ATARI enthusiasts  
everywhere, but not for sale.

(c) 1985, D.B. Byrd

Atari 800 is a trademark of Atari, Inc.

Full credit for the installation of the 5v only chips in the 16K  
board goes to Claus Buchholz and the "MACE Users Group."

This article will describe how to modify, test and use a 256K  
memory board in the middle slot of your ATARI 800. This will  
cost you under \$50, a few hours of your time and will give you a  
total of 288K of RAM. The parts required are:

- 1 - 74LS02
- 1 - 74LS175
- 1 - 74LS86
- 2 - 74LS158
- 1 - 74LS112
- 1 - 74LS138
- 8 - 41256

You may wish to pick up a "spare" memory board as this will allow  
you to return to a stock 800 if you should desire.

#### Getting Started

Remove the middle memory board (or use a spare) and look at the  
memory board. The eight chips along the top are the RAM chips.  
The other four chips are the addressing circuitry. The edge pin  
connectors at the bottom are labeled as in Fig. 2.

The first step is to eliminate the 12v and -5v sources on the  
board and to move the 5v source to where the 12v used to be. As  
shown in Fig. 3, cut the trace going from pin "X" of the board's  
edge connector to the capacitor C523. Cut the traces cleanly and  
completely. Be careful not to slip and damage adjacent traces.  
Now remove capacitors C521 and C523. The trace coming from pin  
"W" carries 5v. Using a short piece of wire, make a solder  
bridge between this trace and the old 12v and the -5v traces, at  
the point where C523 and C521 used to be (see Fig. 2). Next,  
remove the eight capacitors C503, C505, C507, C509, C511, C513,  
C515 and C517, which are usually in a row along the top of the  
board.

We now have 5v going to pins 1, 8, and 9 of the RAM sockets.  
Remove the eight 16k RAM chips and insert the new 256K RAMs in  
their place, properly orienting their notched ends. With an  
ohmmeter, make sure there is NO connection between edge pin "Y"



and pin "B" of the chips, nor should there be any connection between any of the edge pins "W", "X", and "Y".

If all has gone well the board should function like a 16K memory board, since the addressing circuitry has not been altered. Put the modified memory board in the middle slot of your 800, and check to see if it functions normally. The blue screen should appear quickly, if not, recheck all modifications done so far. Now, take the 5v supply off pins 1 and 9 of the RAM chips. To do this, cut the two rightmost wide traces on the chip side of the board (see Fig. 4). Pick up a new 74LS158 chip, which is the same as the chips 2503 and 2504 on the memory board. With needlenose pliers, carefully bend up all pins except 1, 8, 15 and 16 (see Fig. 5). Remove chip 2503, place the new chip on top so that the four pins listed above touch the same four pins on the lower chip. Carefully, solder each of the four pairs together, being careful not to get too much solder on the end of each pin. Now insert the pair in socket 2503. The second new 74LS158 chip is to be mounted in the same fashion on top of 2504 except that pin 1 is also elevated and not soldered. Now insert this pair in socket 2504.

Next we will prepare the additional chips for mounting. These chips will be mounted "dead bug" style, so it is a good idea to put a stick on label on the underside of each chip indicating its type and the location of pin 1. Install the four new chips in the vacant area below the memory chips. I used "Super Blue" to attach them. Make sure you get them in the right place the first time. Now wire the new chips per the diagram in Fig. 6. Connect 5v and ground pins first to each dead bug chip. Convenient connection points for 5v and ground are the left and right ends of each capacitor located directly below each RAM chip. Connect each chip individually with short wires. Connect a temporary jumper from pin "V" to

Lets check...

Return the memory board to the middle slot for testing as a 16K board. If the blue screen doesn't come up quickly, turn it off immediately and check your work. If it checks OK, remove it and the temporary jumper connecting pins "V" and "W", and cut the track connecting pins M to N, P to R, and S to T. The 256K board is complete so put it aside for now.

#### Standard memory board mod.

Remove the two remaining 16K memory boards from the computer and remove them from their cases. On the reverse side of the board, find the tracks connecting M to M, P to R, and S to T. Cut these tracks on both 16K boards. If you wish, you may reinstall these boards in their cases.

#### Personality board (ROM) mod.

Remove the ROM board, and take it out of the case. Find Z401 and prepare to mount a new 74LS138 on top, in a similar fashion to that shown in Fig. 5. This time however, leave pins 1, 2, 3, 4, 8 and 16 pointing down, and solder them to the same numbered pins on the bottom chip (Z401). Next you must criss cross pins 5 and 6 of the upper chip so upper pin 6 connects with lower pin 5 and vice versa. Use some heat shrink tubing or electrical tape on one of the upper pins to insulate it from touching the other. Finally, connect a jumper from upper pin 7 to pin 20 (the only unused pin) on the card edge. Do not allow solder to flow down the card edge pin. Reinstall the ROM board in its case.

#### Now the backplane jumpers.

Now it will be necessary to get to the 800 backplane. This requires removal of the case. First remove all cables from the computer. Turn the 800 over, with the game ports facing you,

remove the five recessed phillips screws holding the bottom cover. It may now be removed by lifting at the rear and then sliding it forward to clear the game port connectors. This will expose the bottom RF shield. Remove the nine phillips screws holding the bottom RF shield and mother board in the RF cage. Remove the phillips screws on the sides of the RF cage. Gently lift the front edge of the mother board and power supply boards and disconnect the keyboard ribbon cable, the power supply cable (note its orientation), and speaker cable. Separate the power supply board and the mother board. The mother board and lower RF shield may now be lifted up and out of the RF cage. Now remove the CPU card. The bottom shield must be removed. It is attached with 4 plastic expansion pins. Use a screwdriver to push the center pin out until it can be removed from the bottom. Now remove the outer pins. The bottom shield will lift off and expose the entire backplane area under the card cage. using Fig. 7 as a guide, install the 7 jumpers using a fine, solid conductor, insulated wire. Recheck your work with particular attention to correct pins, solder bridges and shorts. Reinstall the bottom shield and replace the plastic pins.

#### Reassembly

Reinstall the CPU board, place the mother board in the RF cage and reinsert the power supply connector. Reconnect the keyboard cable and speaker cable. Replace the screws in the RF cage and then the nine screws holding the bottom shield. Reinstall the bottom cover and replace the five phillips screws. The 800-PLUS 256K modification is now complete.

#### Now for the last test

Turn the 800 upright and reinstall all cards making sure the 256K upgrade is in the middle slot. Replace the top cover and close the cartridge lid. Again, power up the computer and watch for the blue screen to appear. As before, if it does not appear, turn off the machine and recheck your work. If all is normal, congratulations, you now have an ATARI 800 with 48K of normal memory, and 208K of extended memory.

#### Accessing all that RAM

The 256K is divided up into 16 sections (or "banks") of 16K each. At any given instant only one of the sixteen is visible to the computer at locations (\$4000-\$7FFF), however the other 15 are waiting, out of sight, with all previous contents intact. To "see" any of the 16 banks all that is needed to do is to poke the number of the bank you want (from 0-15) in location \$CFFF.

#### Summary

Unlike other 256K mods which have appeared recently, this one works perfectly with two of Atari's most popular business programs, SYNFILE+ and SYNCALC. Upon booting an original copy of SYNFILE+ you will find it displays the message, "288K RAM PRESENT." Probably, the most effective use of this extra memory is as a RAMDISK. I currently have a program that will patch MYDOS 3.05 to access this extra RAM as drive 8, a 946 sector double density RAMDISK.

The author of the patch, Ross Beers, has allowed me to put this in the public domain on the LAACE BBS for download under the name "MYDOS256".

Finally, if you have any questions or comments about this modification, leave a message on the LAACE BBS for me and I'll reply ASAP.

Enjoy

Robert Bobbio

LAACE BBS (818) 348-8644

The 130XE/576K upgrade, by Scott Peterson.

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Here we go again, this time I recommend you have some electronics experience if you wish to perform the upgrade. Some of the work is duplicated from the 320K upgrade so 320XE owners will not have as much work to do. One other point, when in the 576K mode you MUST use some sort of basic cart. as you lose the internal basic, this is only in the 576K mode, in the 130XE mode internal basic will function normally.

#### TOOLS NEEDED;

To perform this upgrade you need the following;

Low wattage fine tip soldering iron.

Vacuum de-soldering tool (like Radio Shack PN#64-2098).

Some 30-gauge wire (Radio Shack PN#278-501).

#2 Phillips head screwdriver.

Heat-shrink tubing, 1/8 in. Dia.

Also a pair of small needle-nose pliers and a small flat tip screwdriver are handy.

#### PARTS NEEDED;

Z1 74LS158

Z2-Z17 41256 (150ns.)

Z18 74LS138

Z19 7432

R1-R2 33 ohm 1/4 watt resistor.

S1 Micro-mini DPDT switch (like Radio Shack PN#275-626)

Remove the 130XE case and metal RF shield to get down to the mother board. (320XE users go to step two).

#### STEP ONE:

Now de-solder and remove the eight ram chips U26 thru U33 (MT4264). They are the row closest to the TV RF module (do NOT use solder wick, the circuit board of the 130XE has very weak runs and they will pull loose if not completely de-soldered). Replace these with the 16 pin low profile sockets. Take a piece of wire approx 12 in. long and run a jumper from pin 1 of each socket to the next. When you are done the wire should be attached to pin 1 of each of the new sockets and you should have about 6 inches left over. Do this on the rear of the mother board and then snake the wire thru the large hole near the ram chips.

Next, desolder and remove U23 (C014795), and replace it with a 40 pin socket. Bend up pins 15 and 16 and insert it in the socket you just installed. Take Z1 (74LS158) and break off pins 5,6,7,9,10,11,12,13,14. Bend up the other pins on it except 8 and 16. Put this "piggy back" on top of U20 (HD14050, or 4050 - located just to the right of C50) and solder pins 8 and 16 of Z1 to pins 8 and 16 on U20. Now take

piece of wire about 4 in. long, solder one end to pin 30 on the chip marked "C014805" on the mother board, and the other end to pin 1 on Z1. Next solder a wire to pin 15 (one of the two you bent out) of U23 and connect the other end to pin 2 on Z1. Solder a wire to pin 16 on U23 and connect the other end to pin 3 on Z1.

Take R1 (33 ohm) and trim the leads to about 1/4 in. Take the wire you connected to pin 1 of the ram chip sockets and solder it to one end of R1, solder the other end of R1 to pin 4 on Z1.

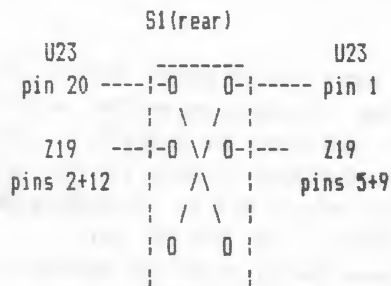
#### STEP TWO:

Slide the mother board back into the bottom half of the plastic case (do not use the RF shield, you must be able to get at the mother board), and attach the keyboard. It will rest above the mother board without touching it. Test all 41256 ram chips by putting one set of 8 in the sockets and using the handlers (or DOS's), and then the next. After testing all ram chips remove them all from the sockets, and take 8 of them and cut about half of pin 15 off of each one. Only the "fat" part of pin 15 should be left. After doing this you have to "piggy back" the 8 256K ram chips with the short pin 15's on top of the other 8 256K ram chips. Now solder all the pins together on the stacked ram chips except for pin 15, it should not be touching the other pin 15, make sure you have them going pin 1 to 1, pin 2 to 2, ect. When you get done you will have 8 sets of Piggy backed 256K ram chips. Now take a piece of wire about 16 in. long and run a jumper from pin 15 to the next one on all the top 256K DRAM's, leaving about 1 inch between each ram chip. Put these stacked ram chips into the 8 sockets you installed earlier. Take Z18 (74LS138) and bend up all the pins except 8 and 16, cut the pins you bent up in half so only the fat part is left, and solder pins 8 and 16 to pins 8 and 16 of the other 74LS138 right below the U23 (C014795). Take Z19 and bend up all pins except 7 and 14, once again cut all the pins you bent up in half and solder pins 7 and 14 to pins 7 and 14 of the 74LS08 right below U23.

Take the wire you jumpered earlier to pin 15 of Z10 thru Z17 (the upper row of 256K ram chips) and go out 2 in. and cut the wire, now install R2 (33 ohm) between this cut. Place a piece of heat shrink tubing over R1 and make sure no wire is exposed and heat it with a lighter. Take the other end of this wire and connect it to Z18 pin 14. Find the 2 33 ohm resistors just to the right of U28 (one of the ram chips you socketized). The upper one of the 2 is R111, desolder the right leg of it and bend it up. Take a piece of wire and solder it to the land where you just removed the leg of R111. Connect the other end to Z18 pin 4. Trim back the leg of R111 and solder a wire to it, slip a piece of heat shrink tube over it and heat it up. Now connect the other end to Z18 pin 12. Take a short wire and run a jumper from pins 1 and 16 of Z18. Take another short wire and connect a jumper from pins 3,5, and 8 of Z18. Now connect a wire from Z18 pin 2 to Z19 pin 3.

Find the wire you installed from U23 pin 15 to Z1 (74LS158) pin 2 and desolder it from U23. Take it and reconnect it to Z19 pin 11. Ok, now pry U23 (C014795) back out of the socket and bend up pin 11, plug it back in. Run a jumper from pins 1 and 4 of Z19, and another jumper from pins 10 and 13 of Z19. Connect a wire from U23 pin 11 to Z19 pin 1, and from

U23 pin 15 to Z19 pin 13. Now connect a wire from Z19 pin 8 to the right side of the 3.3K ohm resistor marked R206 (located at the bottom right of U23). Connect a wire to Z19 pin 6 and run it to pin 18 of U3 (CD61618). Now comes the tricky part, drill a small hole (1/4 in. or so, depending on the switch size) at the rear right on the back of your 130XE. Take the small DPDT switch (S1) and install it in the hole. Now connect it as shown (make sure the switch DOESNT have a center off position);



Note: where the wires cross in the middle, they are NOT connected. Make the connection from the switch to U23 on the rear of the mother board. Well that's it (thank god). Now re-assemble the computer, being carefull not to break any wiring going to the switch. You should now have in one switch position a 100% compatible 130xe, and in the other you have a 576K 130XE that does not have Antic memory enhance mode and also can-not use internal basic. In the 130XE mode you gain 64K as bit 6 of the PIA can still be used. The following page list of the bit table and numbers to be used in location 54017 (PORTB). Once again, if you need help call the Peanut Gallery BBS (408)-384-3906. If you want a mailer of all the upgrades I have as well as a disk with handlers, source codes, ect. send a money order (please, no checks) for \$10.00 to;

Scott Peterson  
P.O.Box 33  
Ft.Ord CA. 93941-0033

This includes the 800 288K upgrade by D.G.Byrd, the 800XL/256K (C.Burchholz), the 130XE/320k upgrade and anything else I finish. Good luck, and have fun.

Memory Control Register 54017 (D301)  
130XE in 576K mode.

Bit 7 6 5 4 3 2 1 0  
D a b C c d e R

D=0 enable diag. ROM  
R=1 enable OS ROM  
C=0 enable extended memory  
abcde= memory control bits.

```

-----
Bank#   Control#(dec) Hex
-----
Bank 0 ----->129  81
Bank 1 ----->131  83
Bank 2 ----->133  85
Bank 3 ----->135  87
Bank 4 ----->137  89
  
```

```

Bank 5 ----->139  8B
Bank 6 ----->141  8D
Bank 7 ----->143  8F
Bank 8 ----->161  A1
Bank 9 ----->163  A3
Bank 10 ----->165  A5
Bank 11 ----->167  A7
Bank 12 ----->169  A9
Bank 13 ----->171  AB
Bank 14 ----->173  AD
Bank 15 ----->175  AF
Bank 16 ----->193  C1
Bank 17 ----->195  C3
Bank 18 ----->197  C5
Bank 19 ----->199  C7
Bank 20 ----->201  C9
Bank 21 ----->203  CB
Bank 22 ----->205  CD
Bank 23 ----->207  CF
Bank 24 ----->225  E1
Bank 25 ----->227  E3
Bank 26 ----->229  E5
Bank 27 ----->231  E7
Bank 28 ----->233  E9
Bank 29 ----->235  EB
Bank 30 ----->237  ED
Bank 31 ----->239  EF
  
```

There is a version of MYDOS to support this mod, its called 4.1A and will run up to 32 16K banks. At this time ICD is working on a RD.COM file to support this. Also I have written a machine lang. tester that will load and test all 32 banks of memory to insure that they are there and work. Wonder how long it will take Jay Torres to copy this one.

Good luck  
Scott Peterson

**The Taig/Space BBS  
is now up!  
(612) 522-2687**

**24 hours a day  
7 days a week**

**300/1200 bps  
10 megabytes storage!**

## A Review Of OSS's BASIC XE - By Tom Green

BASIC XE should be the BASIC language that comes in your Atari 130 XE, just like BASIC XL should have been in the XL's. I'll begin by listing some of the features of BASIC XE.

Using the FAST command the computer no longer looks for line numbers, it converts all line numbers to memory locations. The computer doesn't have to search for line numbers. If it encounters a GOTO, GOSUB, FOR, or WHILE, it doesn't have to start looking from the beginning of the program to find the specified line number. It just goes directly to the proper memory location and starts executing from there. FAST only compiles line numbers that are constants, it will not change a GOSUB 2\*EXP etc. This GOSUB will execute at normal speed. Several commands will terminate the FAST mode and caution has to be used as to the placement of the FAST command in a program.

The EXTEND command will allow your BASIC program to access all of the 130's extra memory, you end up with about 65K for programming and about 30K for data/variable storage. So when you DIM strings and arrays you aren't robbing BASIC programming space.

You do not have to type in your commands or program lines in CAPITAL/NON INVERSE characters, you can type them in any form and the computer will accept it with no problem. When listing a program the computer formats the output so that all lines in a FOR/NEXT loop or WHILE/ENDWHILE loop are indented, making it easier to follow the flow of the program. The NUM command will automatically prompt you with line numbers, so you can just type the program line and not the line number.

String handling is VASTLY improved. With Atari BASIC if you want to add characters to the end of a string you would have to do this:

```
10 ST$(LEN(ST$)+1)="ADD ON"
```

With BASIC XE it looks like this:

```
10 ST$=ST$,"ADD ON"
```

Also you have the LEFT\$, RIGHT\$, MID\$ commands for picking out certain parts of strings. You no longer need to DIM every string variable you are going to use. BASIC XE automatically DIMensions at the first occurrence of the string in the program. It defaults to DIMension the variable to 40 characters, you can change it to automatically DIMension up to 255 characters. The FIND command is an excellent feature to locate certain strings inside of other strings. Need to

know the Hexadecimal equivalent of a decimal number? PRINT HEX\$(N) where N is a decimal number, will do it for you.

Player/Missile graphics can be handled with ease compared to cumbersome machine language routines. You can move the Player/Missile graphics horizontally and vertically with one command. Set colors, width, detect collisions, all with BASIC commands.

Controller commands are greatly improved over Atari BASIC. PEN(0) will return the horizontal position of a light pen. PEN(1) returns the vertical position. The standard Atari commands are present, PADDLE(), PTRIG(), STICK(), STRIG(). BASIC XE adds HSTICK() which is the horizontal position of the joystick and returns a -1 if stick is to the left, 0 if centered, +1 if pushed to the right. Also VSTICK() which works similarly. These commands make reading and interpreting the joystick much easier.

Error reporting is much easier to decipher. You get english explanations of the Error and where it occurred. ERR(0) will return the Error # of the last error to occur and ERR(1) will give you the line number, no more PEEKing to get the info.

Other commands that BASIC XE has:

LOCAL: Allows you to use variables in subroutines and resets them to their original value that they had before entering the subroutine.

DEL: Delete blocks of line numbers instead of having to type in each line number you want erased. Ex. If you want to erase all lines from line 50 to line 100 in your program just type: DEL 50,100 and they're gone.

RENUM: Renumber your programs automatically.

BLOAD: Binary Load object files from BASIC.

TRACE/TRACEOFF: Follow the flow of your program as it is running, an invaluable aid to debugging BASIC programs.

SET(): Allows you to set 16 different system functions to your needs.

0- Sets TRAPable error when break key is pressed.

1-TAB stop setting.

2-Prompt character to be printed for INPUT (Default is ?).

3-Minimum number of times a FOR/NEXT loop will execute.

4-On multiple variable INPUT's you can set a TRAPable error instead of the ?? reprompt.

5-Character entry case. Allows you to force BASIC XE to act like Atari BASIC when entering program lines i.e. CAPS/NON-INVERSE.

6-Error message mode. Explanation with line number, or error



# only (Like Atari BASIC).  
 7-P/M wraparound control.  
 8-Controls whether a USR call pushes # of parameters on to the run-time stack.  
 9-Allows you to set a TRAPable error so that a program will continue to execute after the ENTER command.  
 10-Missile control.  
 11-Automatic DIMension size.  
 12-List format, controls whether LIST will indent loops.  
 13-Allows you to use the VAL function to return hexadecimal numbers as long as the string begins with a \$.  
 14-PRINT USING function control.  
 15-EXTENDED mode controls function of the ADR() function.

SYS: Shows you how you have the different SET parameters set.

LOMEM: Allows you to reserve space below the normal programming space.

LVAR: Lists all variables and every line number that a variable occurs on. You can LVAR to screen or printer.

PRINT USING: Allows you to format printed information.

NORMAL/INVERSE: Toggles characters between existing inverse and normal.

BGET/BPUT/RGET/RPUT: Block GET and PUT, and Record GET and PUT, speeds up disk access time.

WHILE/ENDWHILE: Loop while certain conditions are met, a combination of a FOR/NEXT loop and an IF/THEN statement.

IF/ELSE/ENDIF: Allows you to keep program flow on one line. Just because a certain condition is false does not mean program flow HAS to begin on the line following IF statement.  
 Ex.:

```
10 IF X=1 :? "X EQUALS 1":ELSE :? "X DOES NOT EQUAL 1":ENDIF
: ? "PROGRAM EXECUTION BEGINS HERE REGARDLESS OF THE CONDITON OF X"
```

SORTUP/SORTDOWN: Automatically sort string and arithmetic arrays at machine language speed.

DPEEK/DPOKE: Poke both high and low order of addresses/numbers with one command and no arithmetic.

MOVE: Allows you to move memory from one area of the computer to another.

RANDOM: Select random numbers with no arithmetic. You want a

random number from 0 to 20? X=RANDOM(20) will do it. A random number from 50 to 100? X=RANDOM(50,100) will do that!

PROCEDURE: Name a subroutine and then CALL that routine instead of GOSUBing.

EXIT: Leave subroutines early.

DISK FUNCTIONS WITH BASIC COMMANDS:

RENAME: Ex. RENAME "D2:OLDNAME.BAS,NEWNAME.BAS" Renames OLDNAME.BAS to NEWNAME.BAS

PROTECT: Ex. PROTECT "D4:FILENAME.EXT" Locks the file FILENAME.EXT so it can only be read.

UNPROTECT: Ex. UNPROTECT "D:FILENAME.EXT" Unlocks the file FILENAME.EXT so that it can be written to.

ERASE: Ex. ERASE "D:FILENAME.EXT" will erase the file FILENAME.EXT from disk in drive one.

DIR: Gives you a directory of drive specified, if no drive is specified it defaults to drive 1.

In addition to all this there are new arithmetic operators for BITWISE OR / AND / EOR and others.

I just can't say enough good things about BASIC XE. But there is ONE thing that bothers me about BASIC XE. A lot of the functions are not included in the cartridge, they have to be booted from a separate disk. The file that is loaded is 91 sectors long so takes about 10 seconds to load. The operating speed of the programs you will write with BASIC XE more than makes up for the time you spend waiting for the file to load.

The documentation is fair compared to most. I feel that listing the above commands/function would speak for itself. If you program in BASIC you NEED this product. OSS does it again.

Prices range from \$79-\$50(Local) and \$49-\$39(mail order).

If you have any questions about BASIC XE or it's implications in running a BBS you can direct them to me (Tom Green) at 612-522-2687(300/1200 Bps).



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Local BBS's  
The Doghouse 432-7668  
by Ronin Argo

(ed. note: We hope to make this column semi-regular. If you know of any non Atari BBS that still supports the Atari line (8 or 16 bit) feel free to write an article on it. We simply don't have enough time to call every BBS in the area, so your cooperation would help greatly.)

The Doghouse is a Citadel based system, which is, I feel, one of the best message based software, you move from room to room by using commands such as G to goto other rooms or S to skip over rooms. The Doghouse has many different rooms each with different topics. As well as the message capabilities it also allows Xmodem downloads and uploads for many types of computers, including Atari. In fact there are 6461 sectors available of public domain software. Some titles include, Pokey player (Scrunched, on previous DOM), and that

ever favorite Myrapede, a very good centipede clone. All of the super duper popular Xanth demos are on-line, such as the Swan Demo, and other utilities, games, and application programs. Very few Atari BBS's have over six thousand sectors to offer for downloads, but don't get me wrong I enjoy the message base the most. It's rare to find a non-Atari board that supports us, let alone that's willing to give us six thousand sectors (with no limit yet).

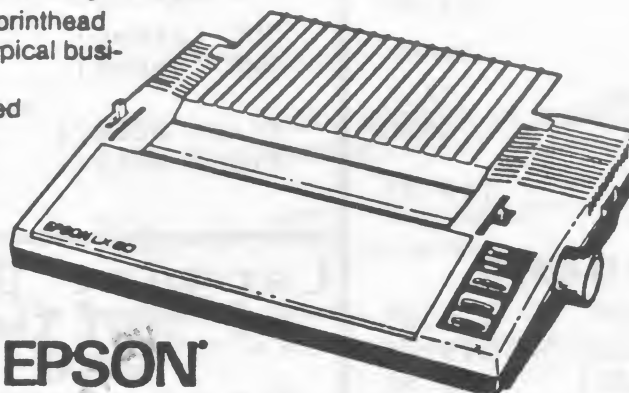
The conversations on the message bases are widely diversified, ranging from the intricate application of spam to why channel 23 changed formats (urgh!), well maybe not, but we're willing to try. The commands, themselves, are a bit different from most BBS's but very logical, and there is extensive help on line.

So give The Doghouse a try at 432-7668! (300/1200 bps. ASCII translation) It's a valuable Atari resource, a definite boon.

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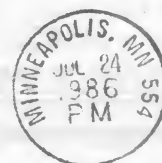
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Next TAIG meeting  
Sunday July 27  
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The Taig/Space BBS  
is now up!  
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